储能工控上位机

通信协议

项目名称：

项目编号：

编制：

审核：

批准：

更改控制页

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 序号 | 版本号 | 更改时间 | 更改内容描述 | 填写人 |
| 1 | V0.1 | 2021/11/20 | 初始版本 |  |
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1. 概述

本通信协议适用于消防主机与工控上位机的数据传输，消防主机按照本协议主动上传数据，上位机接收后进行回复。

本通信协议适用UDP协议。

1. 数据格式

2.1消防主机主动上传报文格式

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 起始符 | 长度 | ID | 功能码 | 功能标识 | 数据格式 | 数据内容 | CRC | 结束符 |

格式说明：

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 数据内容 | 字节数 | 含义 |
| 0 | ‘Q’（51H） | 2 | 同步字符 |
| 1 | ‘N’（4EH） |
| 2 | XXH | 2 | 长度 |
| 3 | XXH |
| 4 | XXH | 1 | ID |
| 5 | XXH | 1 | 功能码 |
| 6 | XXH | 1 | 功能标识  0：读取成功  1：读取失败 |
| 7 | XXH | 1 | 数据格式 |
| 8 | XXXXXXXXXXXXXX | N | 数据内容 |
| 8+N | CRC | 1 | CRC |
| 8+N+1 | ‘E’（45H） | 1 | 结束码 |

2.2上位机回复报文格式

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 起始符 | 长度 | ID | 功能码 | 回复标识 | 回复数据 | CRC | 结束符 |

格式说明

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 数据内容 | 字节数 | 含义 |
| 0 | ‘Q’（51H） | 2 | 同步字符 |
| 1 | ‘N’（4EH） |
| 2 | XXH | 2 | 长度 |
| 3 | XXH |
| 4 | XXH | 1 | ID |
| 5 | XXH | 1 | 功能码 |
| 6 | XXH | 1 | 回复标识 |
| 7 | XXH | 1 | 回复码(默认0)  否定答复生效 |
| 8 | CRC | 1 | CRC |
| 9 | ‘E’（45H） | 1 | 结束码 |

1. 回复说明

回复分肯定回复和否定回复。肯定回复无问题，否定回复数据格式存在问题

3.1肯定回复

肯定回复标识码为上传数据功能码，回复码默认为零

3.2否定回复

否定回复标识使用功能码7F，回复码生效。

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 回复码 | 回复码描述 | 备注 |
| 1 | 11H | 服务不支持 |  |
| 2 | E0H | CRC校验失败 |  |
|  |  |  |  |

1. 支持功能代码

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 回复码 | 回复码描述 | 备注 |
| 1 | 60H | 系统信息 |  |
| 2 | 70H | 故障信息 |  |
| 3 | 80H | 分区信息 |  |
| 4 | 90H | 探测器信息 |  |
| 5 | A0H | 灭火器信息 |  |

1. 报文类型

所有报文类型均来源于转发主机读取消防主机信息后，根据结果主动上传工控上位机。分读取成功格式和读取失败格式。

5.1系统信息报文（60H）

总报警个数、总故障个数、总探测器个数。

读取成功格式

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 数据内容 | 含义 | 备注/范围 |
| 1 | 60H | 功能码 |  |
| 2 | 00H | 读取成功 |  |
| 3 | 01H | 数据格式 |  |
| 4 | 03H | 个数 |  |
| 5 | XXH | 总报警个数 |  |
| 6 | XXH |
| 7 | XXH | 总故障个数 |  |
| 8 | XXH |
| 9 | XXH | 总探测器个数 |  |
| 10 | XXH |

读取失败格式

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 数据内容 | 含义 | 备注/范围 |
| 1 | 60H | 功能码 |  |
| 2 | 01H | 读取失败 |  |
| 3 | 01H | 数据格式 |  |
| 4 | 00H | 个数 |  |

5.2故障信息报文（70H）

防护区、设备类型、设备编号、故障码

读取成功格式

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 数据内容 | 含义 | 备注/范围 |
| 1 | 70H | 功能码 |  |
| 2 | 00H | 读取成功 |  |
| 3 | 01H | 数据格式 |  |
| 4 | XXH | 个数 |  |
| 5 | XXH | 预留扩展 |  |
| 6 | XXH | 预留扩展 |  |
| 7 | XXH | 防护区 |  |
| 8 | XXH | 设备类型 |  |
| 9 | XXH | 设备编号 |  |
| 10 | XXH | 故障码 |  |
| 11 | XXH | 预留扩展 |  |
| 12 | XXH | 预留扩展 |  |
| 13 | XXH | 防护区 |  |
| 14 | XXH | 设备类型 |  |
| 15 | XXH | 设备编号 |  |
| 16 | XXH | 故障码 |  |
| … |  |  |  |

读取失败格式

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 数据内容 | 含义 | 备注/范围 |
| 1 | 70H | 功能码 |  |
| 2 | 01H | 读取失败 |  |
| 3 | 01H | 数据格式 |  |
| 4 | 00H | 个数 |  |

5.3分区信息报文（80H）

防护区、报警级别、故障、手动模式、自动模式、手动启动、手动急停、启动控制、延时、延时时间、启动喷洒、喷洒

读取成功格式

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 数据内容 | 含义 | 备注/范围 |
| 1 | 80H | 功能码 |  |
| 2 | 00H | 读取成功 |  |
| 3 | 01H | 数据格式 |  |
| 4 | XXH | 个数 |  |
| 5 | XXH | 预留 |  |
| 6 | XXH |
| 7 | XXH | 防护区 |  |
| 8 | XXH |
| 9 | XXH | 报警级别 |  |
| 10 | XXH |
| 11 | XXH | 故障 |  |
| 12 | XXH |
| 13 | XXH | 手动模式 |  |
| 14 | XXH |
| 15 | XXH | 自动模式 |  |
| 16 | XXH |
| 17 | XXH | 手动启动 |  |
| 18 | XXH |
| 19 | XXH | 手动急停 |  |
| 20 | XXH |
| 21 | XXH | 启动控制 |  |
| 22 | XXH |
| 23 | XXH | 延时 |  |
| 24 | XXH |
| 25 | XXH | 启动喷洒 |  |
| 26 | XXH |
| 27 | XXH | 喷洒 | 启动喷洒信号  与灭火器启动否无关 |
| 28 | XXH |
| 29 | XXH | 预留 |  |
| 30 | XXH |
| 31 | XXH | 预留 |  |
| 32 | XXH |
| 33 | XXH | 预留 |  |
| 34 | XXH |
| 35 | XXH | 预留 |  |
| 36 | XXH |
| 37 | XXH | 预留 |  |
| 38 | XXH |
| 39 | XXH | 预留 |  |
| 40 | XXH |
| 41 | XXH | 预留 |  |
| 42 | XXH |
| 43 | XXH | 预留 |  |
| 44 | XXH |
| 45 | XXH | 预留 |  |
| 46 | XXH |
| 47 | XXH | 预留 |  |
| 48 | XXH |
| 49 | XXH | 预留 |  |
| 50 | XXH |
| 51 | XXH | 预留 |  |
| 52 | XXH |
| 53 | XXH | 预留 |  |
| 54 | XXH |
| 55 | XXH | 预留 |  |
| 56 | XXH |
| 57 | XXH | 预留 |  |
| 58 | XXH |
| 59 | XXH | 预留 |  |
| 60 | XXH |
| 61 | XXH | 预留 |  |
| 62 | XXH |
| 63 | XXH | 预留 |  |
| 64 | XXH |
| 65 | XXH | 预留 |  |
| 66 | XXH |
| …… |  |  |  |

读取失败格式

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 数据内容 | 含义 | 备注/范围 |
| 1 | 80H | 功能码 |  |
| 2 | 01H | 读取失败 |  |
| 3 | 01H | 数据格式 |  |
| 4 | 00H | 个数 |  |

5.4探测器信息报文（90H）

防护区、设备类型、ID、报警等级、温度、CO、VOC、烟雾

读取成功格式

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 数据内容 | 含义 | 备注/范围 |
| 1 | 90H | 功能码 |  |
| 2 | 00H | 读取成功 |  |
| 3 | 01H | 数据格式 |  |
| 4 | XXH | 个数 |  |
| 5 | XXH | 预留 |  |
| 6 | XXH |
| 7 | XXH | 防护区 |  |
| 8 | XXH |
| 9 | XXH | 类型 |  |
| 10 | XXH |
| 11 | XXH | ID |  |
| 12 | XXH |
| 13 | XXH | 报警等级 |  |
| 14 | XXH |
| 15 | XXH | 温度 |  |
| 16 | XXH |
| 17 | XXH | CO |  |
| 18 | XXH |
| 19 | XXH | VOC |  |
| 20 | XXH |
| 21 | XXH | 烟雾 |  |
| 22 | XXH |
| 23 | XXH | 预留 |  |
| 24 | XXH |
| 25 | XXH | 预留 |  |
| 26 | XXH |
| 27 | XXH | 预留 |  |
| 28 | XXH |
| 29 | XXH | 预留 |  |
| 30 | XXH |
| 31 | XXH | 预留 |  |
| 32 | XXH |
| 33 | XXH | 预留 |  |
| 34 | XXH |
| 35 | XXH | 预留 |  |
| 36 | XXH |
| …… |  |  |  |

读取失败格式

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 数据内容 | 含义 | 备注/范围 |
| 1 | 90H | 功能码 |  |
| 2 | 01H | 读取失败 |  |
| 3 | 01H | 数据格式 |  |
| 4 | 00H | 个数 |  |

5.5灭火器信息（A0H）

防护区、编号、状态

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 数据内容 | 含义 | 备注/范围 |
| 1 | A0H | 功能码 |  |
| 2 | 00H | 读取成功 |  |
| 3 | 01H | 数据格式 |  |
| 4 | XXH | 个数 |  |
| 5 | XXH | 1#1 |  |
| 6 | XXH |
| 7 | XXH | 1#2 |  |
| 8 | XXH |
| 9 | XXH | 1#3 |  |
| 10 | XXH |
| 11 | XXH | 1#4 |  |
| 12 | XXH |
| 13 | XXH | 1#5 |  |
| 14 | XXH |
| 15 | XXH | 1#6 |  |
| 16 | XXH |
| 17 | XXH | 1#7 |  |
| 18 | XXH |
| 19 | XXH | 1#8 |  |
| 20 | XXH |
| 21 | XXH | 1#9 |  |
| 22 | XXH |
| 23 | XXH | 1#10 |  |
| 24 | XXH |
| 25 | XXH | 1#11 |  |
| 26 | XXH |
| 27 | XXH | 1#12 |  |
| 28 | XXH |
| 29 | XXH | 1#13 |  |
| 30 | XXH |
| 31 | XXH | 1#14 |  |
| 32 | XXH |
| 33 | XXH | 1#15 |  |
| 34 | XXH |
| 35 | XXH | 1#16 |  |
| 36 | XXH |
| …… |  |  |  |

读取成功格式

读取失败格式

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 数据内容 | 含义 | 备注/范围 |
| 1 | A0H | 功能码 |  |
| 2 | 01H | 读取失败 |  |
| 3 | 01H | 数据格式 |  |
| 4 | 00H | 个数 |  |